

APRIL/MAY 2024

**CSSC33 — DESIGN AND ANALYSIS OF
ALGORITHMS**

Time : Three hours

Maximum : 75 marks



SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Short note on Binary search.
2. Define Algorithm.
3. Define Prim's algorithm.
4. What is optimal randomized algorithm?
5. Write a brief note on Shortest path.
6. What is meant by multistage graph?
7. What is meant by Postorder?
8. What is Backtracking?
9. What is NP-Hard?
10. Write a brief note on AND/OR Graph Decision problem (AOG).

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) State the Space Complexity Algorithms.

Or

- (b) What are the advantages and disadvantages of randomized algorithms?

12. (a) Explain the single source shortest paths.

Or

- (b) Describe the Minimum-Cost-Spanning Trees.

13. (a) Write a short note on travelling sales person problem.

Or

- (b) Narrate the Shortest paths with negative edge lengths.

14. (a) State the Least Cost Branch-and-bound tree.

Or

- (b) Explain in detail Depth First search algorithm.

15. (a) Briefly explain the Job shop Scheduling problem.

Or

- (b) State the Clique Decision problem.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. What is Recursive algorithm? Give any one example algorithm.

17. Briefly explain the Knapsack problem.

18. Write about the Five-stage graph.

19. Discuss about the Preorder traversals binary tree.

20. Explain the Non-deterministic algorithm.

